

**4th Grade  
Scope & Sequence  
HAFO Project**

**Idaho State Standards to be Addressed:**

**Standard 1: Nature of Science**

**Goal 1.1:** Understand Systems, Orders, and Organization

**4.S.1.1.1:** Explain that a system consists of an organized group related objects that form a whole.

**Standard 3: Biology**

**Goal 3.1:** Understand the Theory of Evolution

**4.S.3.1.1:** Analyze and communicate the adaptations of plants and animals to their environment

**Standard 4: Earth & Space Systems**

**Goal 4.1:** Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems

**5.S.4.1.1:** Describe the interactions among solid earth , oceans, and atmosphere (erosion, climate, tectonics, and continental drift

**Content Limit:** The role of wind and water play in erosion, different types of clouds, and the formation of earthquakes and volcanoes can all be addressed.

**Instructional Goals: Students Will:**

- 1 Students will be able to understand what an ecosystem is and all it composes.
- 2 Students will be able to learn the six major types of biomes on the planet.
- 3 Students will be able to understand the relationship within an ecosystem.
- 4 Students will be able to understand the water cycle.
- 5 Students will be able to learn the three basic types of clouds.
- 6 Students will be able to understand the difference between weather and climate.
- 7 Students will be able to understand what happens when climates change.
- 8 Students will be able to understand the basics of ancient climates in Idaho and different types of animals that once existed in Idaho.

**Method(s) of Assessment:**

- 1 Observation of students as they conduct experiments and lessons.
- 2 Quiz or Test to check for understanding at end of each lesson.

**Time Needed:**

These activities will generally take 35 - 45 minutes each day.

## Websites with Activities

<http://www.cas.muohio.edu/scienceforohio/Water1/L.html>

<http://www.col-ed.org/cur/sci/sci190.txt>

<http://www.nyu.edu/pages/mathmol/textbook/3gradecover.html>

<http://www.kidzone.ws/WATER/>

<http://www.first-school.ws/activities/science/drippy.htm>

[Online Story: To the Mountain and Back - Drippy the Raindrop](#)

<http://www.kimballmedia.com/Drippy/About.htm>

<http://www.eduref.org/cgi-bin/printlessons.cgi/Virtual/Lessons/Science/Meteorology/MET0024.html>

## Lesson 1: Ecosystems

Time	Presentation
Day 1	<b>Follow the developed ppt. presentation if desired at this point</b> Ecosystem Biotic Factor Abiotic Factor
	<b>Activity:</b> Ecosystem in the School (Inside/Outside Activity) Divide a piece of paper into 2 sections: <b>Biotic Factors</b> <b>Abiotic Factors</b> Guide the kids around school and have them write on the paper things they find that go under each section listed above.
Time	Presentation
Day 2	<b>Follow the developed ppt. presentation if desired at this point</b> Habitat Community Population
Time	Activity
Day 3	<b>Creating a classroom ecosystem</b> <b>Instructions:</b> Have kids decide what kind of ecosystem they would like to have present in the classroom. After they decide have the students help to create this ecosystem using the following items as a base: <b>Items Needed:</b> 10 gal or larger aquarium Some type of soil Plants typical for the ecosystem Later on you can add appropriate animals to your ecosystems after you discuss animals.
Time	Presentation
	<b>Checking for understanding on the following terms:</b>

Day 4	Ecosystem	Habitat
	Biotic Factor	Community
	Abiotic Factor	Population

## Lesson 2: Biomes

Time	Presentation	
Day 5	Follow the developed ppt. presentation if desired at this point	
	Grasslands	
	Deciduous Forests	
	Tropical Rain Forests	
Time	Presentation	
Day 6	Follow the developed ppt. presentation if desired at this point	
	Deserts	
	Taigas	
	Tundra	
Time	Activity	
Day 7	Checking for understanding on the following terms:	
	Grasslands	Deserts
	Deciduous Forests	Taigas
	Tropical Rain Forests	Tundra

## Lesson 3: Relationships in Ecosystems

Time	Presentation	
Day 8	Follow the developed ppt. presentation if desired at this point	
	Producers	
	Consumers	
	Herbivores	
	Omnivores	
	Carnivores	
	Decomposers	
Time	Presentation	
Day 9	Follow the developed ppt. presentation if desired at this point	
	Food Chains	
	Food Webs	
	Competition	
	Energy Pyramid	
Time	Activity	
Day 10	Have your students create a food web by drawing, cutting, and pasting different animals out of wildlife magazines.	

Time	Activity										
Day 11	<p>Checking for understanding on the following terms:</p> <table> <tr> <td>Producers</td><td>Decomposers</td></tr> <tr> <td>Consumers</td><td>Food Chains</td></tr> <tr> <td>Herbivores</td><td>Food Webs</td></tr> <tr> <td>Omnivores</td><td>Competition</td></tr> <tr> <td>Carnivores</td><td>Energy Pyramid</td></tr> </table>	Producers	Decomposers	Consumers	Food Chains	Herbivores	Food Webs	Omnivores	Competition	Carnivores	Energy Pyramid
Producers	Decomposers										
Consumers	Food Chains										
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Omnivores	Competition										
Carnivores	Energy Pyramid										

### Lesson 3: Changes in Ecosystems

Time	Presentation								
Day 12	<p>Follow the developed ppt. presentation if desired at this point</p> <p>Natural Events</p> <p>Living Things</p> <p>Deforestation</p> <p>Overpopulation</p> <p>Pollution</p>								
Time	Activity								
Day 13	Have your students come up with creative posters on how they can change limit pollutions in their own community								
Time	Presentation								
Day 14	<p>Follow the developed ppt. presentation if desired at this point</p> <p>Accommodating</p> <p>Moving Away</p> <p>Extinction</p>								
Time	Activity								
Day 15	<p>Checking for understanding on the following terms:</p> <table> <tr> <td>Natural Events</td><td>Pollution</td></tr> <tr> <td>Living Things</td><td>Accommodating</td></tr> <tr> <td>Deforestation</td><td>Moving Away</td></tr> <tr> <td>Overpopulation</td><td>Extinction</td></tr> </table>	Natural Events	Pollution	Living Things	Accommodating	Deforestation	Moving Away	Overpopulation	Extinction
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Living Things	Accommodating								
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### Lesson 4: Weather and Climate

Time	Presentation
Day 16	<p>Follow the developed ppt. presentation if desired at this point</p> <p>Weather</p> <p>Temperature</p> <p>Precipitation</p> <p>Humidity</p> <p>Air Pressure</p>

	Climate
Time	Activity
Day 17	<p>Checking for understanding on the following terms:</p> <p>Weather</p> <p>Temperature</p> <p>Precipitation</p> <p>Humidity</p> <p>Air Pressure</p> <p>Climate</p>

## Lesson 5: Water Cycle

Time	Presentation								
Day 18	<p>Introduction to Water Cycle Vocabulary Through Story</p> <p>By: Joel M. Kimball, "Adventures To The Mountains"</p> <p>Follow the developed ppt. presentation if desired at this point</p> <p>Evaporation</p> <p>Condensation</p> <p>Precipitation</p> <p>Accumulation or (Collection)</p> <p>Water Cycle</p>								
Time	Presentation & Activity								
Day 19	<p>Evaporation</p> <p>Teacher Demonstration: <u>Fog in a bottle</u></p> <p>Condensation</p> <p>Teacher Demonstration: <u>Creating Condensation</u></p>								
Time	Activity								
Day 20	Teach the "Water Cycle Song"								
Time	Activity								
Day 21	<p>Checking for understanding on the following terms:</p> <table border="0"> <tr> <td>Evaporation</td><td>Water Cycle</td></tr> <tr> <td>Condensation</td><td>Evaporation</td></tr> <tr> <td>Precipitation</td><td>Condensation</td></tr> <tr> <td>Accumulation or (Collection)</td><td></td></tr> </table>	Evaporation	Water Cycle	Condensation	Evaporation	Precipitation	Condensation	Accumulation or (Collection)	
Evaporation	Water Cycle								
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Precipitation	Condensation								
Accumulation or (Collection)									

## Lesson 6: Clouds

Time	Presentation
	<p>Introduction to Climate Vocabulary</p> <p>Cirrus</p>

Day 22	Cumulus Stratus <b>Activity: Cloud in a Bottle</b> <b>Directions: Go to the following website, and follow the directions</b> <a href="http://www.weatherwizkids.com/cloud1.htm">http://www.weatherwizkids.com/cloud1.htm</a>						
Time	Activity						
Day 23	Have the student make clouds and label each. <b>Items Needed:</b> Construction Paper Cotton Swabs Glue Markers						
Time	Activity						
Day 24	<b>Checking for understanding on the following terms:</b> <table> <tr> <td>Cirrus</td><td>Cumulus</td></tr> <tr> <td>Cumulus</td><td>Stratus</td></tr> <tr> <td>Stratus</td><td></td></tr> </table>	Cirrus	Cumulus	Cumulus	Stratus	Stratus	
Cirrus	Cumulus						
Cumulus	Stratus						
Stratus							

## Lesson 7: Paleoecosystems

Time	Activity
Day 25	Bring in National Park Service Presenter at this time: <a href="http://imnh.isu.edu/digitalatlas/teach/subfrm.htm">http://imnh.isu.edu/digitalatlas/teach/subfrm.htm</a> Click on Hagerman Diorama
Day 26	<a href="#">Digital atlas of Idaho : Hagerman Diorama</a> <a href="#">NPS Software</a>